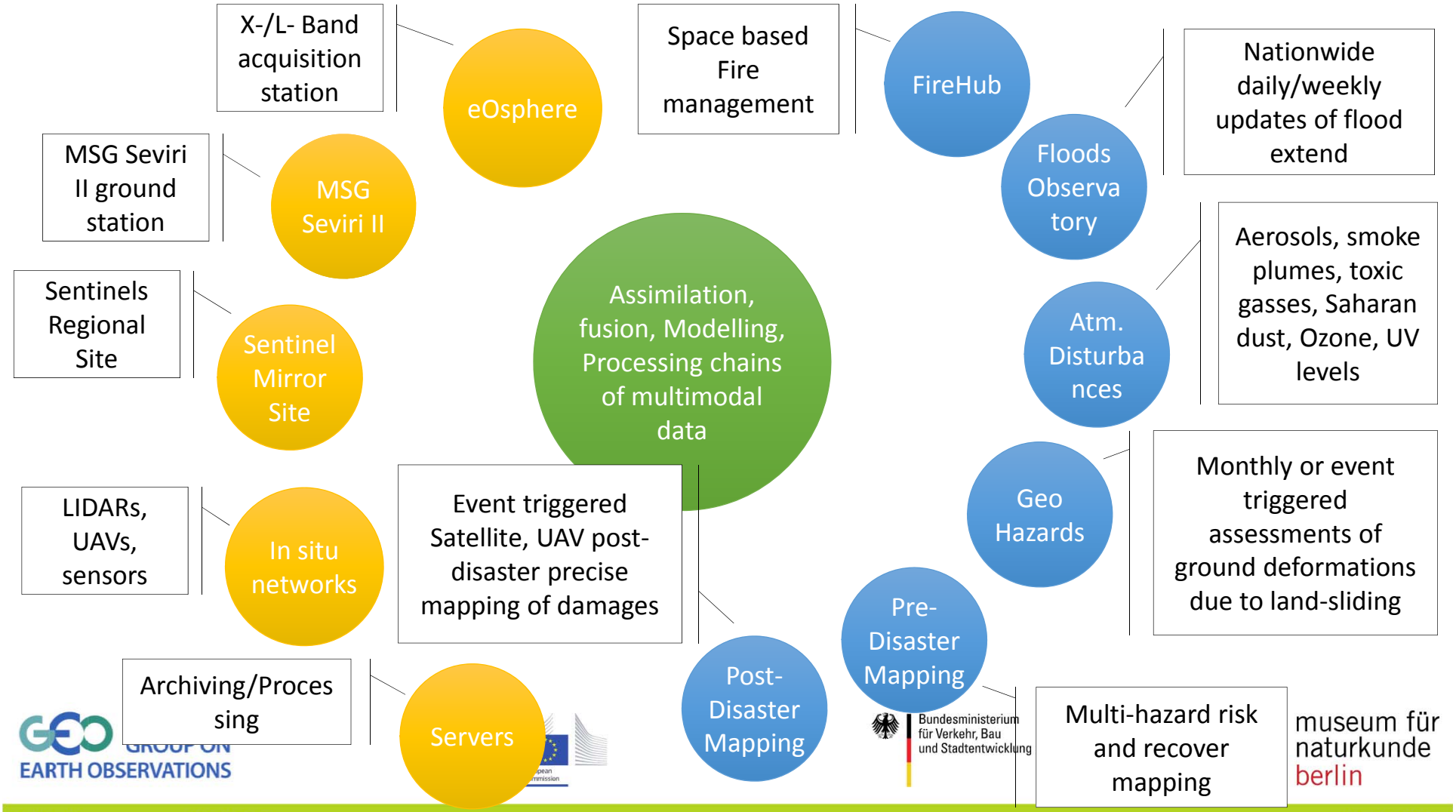
DisasterHub

A mobile app Enabling crowd-generated data fusion in Earth Observation disaster management

BEYOND Ecosystem (Services, products & infrastructure)



GEO GROUP ON EARTH OBSERVATIONS

Bundesministerium für Verkehr, Bau und Stadtentwicklung

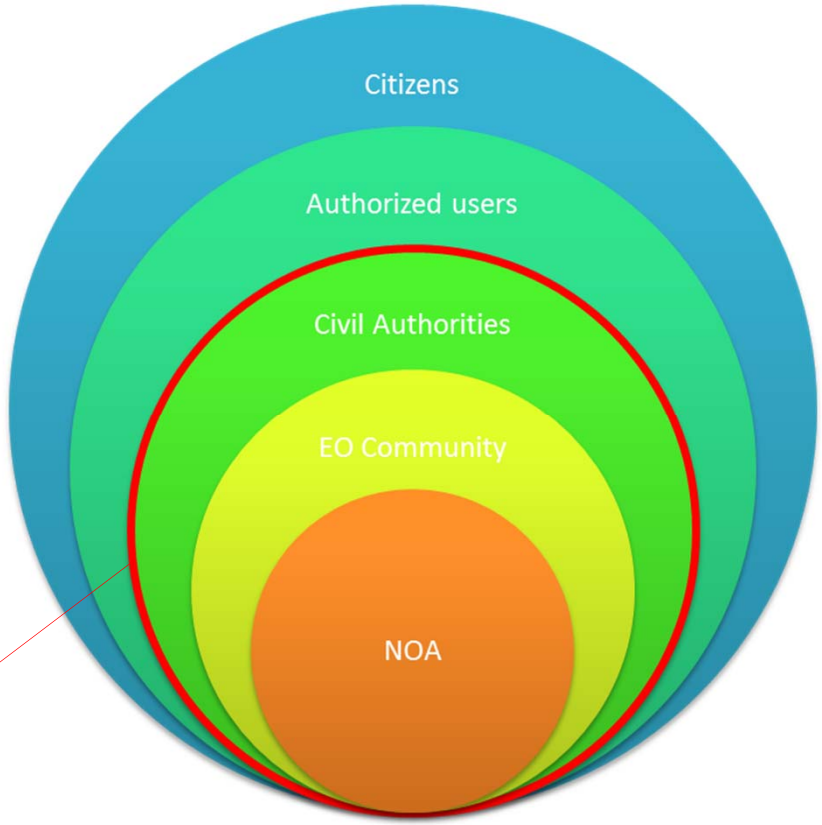
museum für naturkunde berlin

What DisasterHub does?

- Enables the users to send a geotag specifying a location stricken by a hazardous phenomenon.
- Provides the users with a near real-time feed of data derived from the BEYOND services.
- Offers a (currently limited) toolbox that allows the management and visualization of the data derived from the BEYOND services, combined with crowd generated and GEOSS based data.

Who is it aimed at?

- Citizens and especially those that are authorized to act during crisis.
- EO community for the development of the future techniques and especially toolboxes that will enhance the fusion of crowd generated data with EO data.



The outreach of most services hit this wall

Who does it work?

Open Source Frameworks & tools


Adobe PhoneGap


AngularJS


Apache Cordova


Auth0


Crosswalk WebView


Ionic Framework


ngCordova


NodeJS


OpenLayers 3


PHP


PostgreSQL


PostGIS

Who does it work?

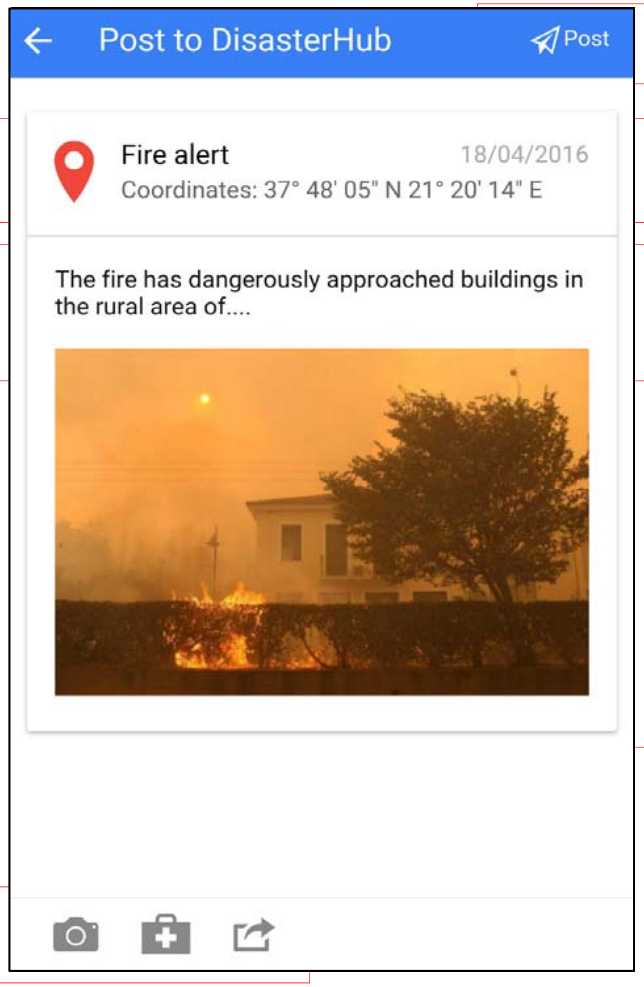
Open Data

- OSM.
- MapQuest satellite.
- High resolution aerial images of the Hellenic National Cadastre Services (EKXA VLSO).
- CLC 2006.
- Natura 2000.
- Urban Atlas.
- Toponyms.
- Crowd generated geotags without user information.
- FireHub generated datasets:
  - Raw fire polygons generated through processing MSG Seviri II satellite images.
  - Refined fire polygons generated through further processing of MSG Seviri II satellite images.
  - Fire polygons generated through processing satellite images from polar orbiting satellites (Aqua/Terra MODIS, NPP VIIRS, NOAA AVHRR).

Basic info of the geotag

Add a short text info

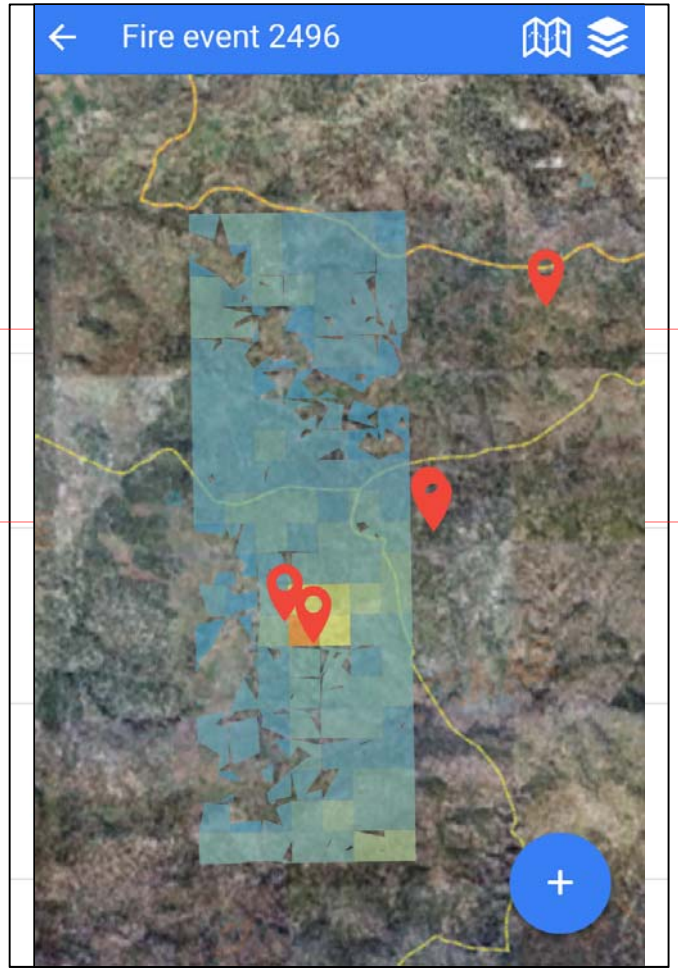
Send a photo from the burnt location



Popovers through which you can manage layers derived from open data

Click on the button to add a geotag

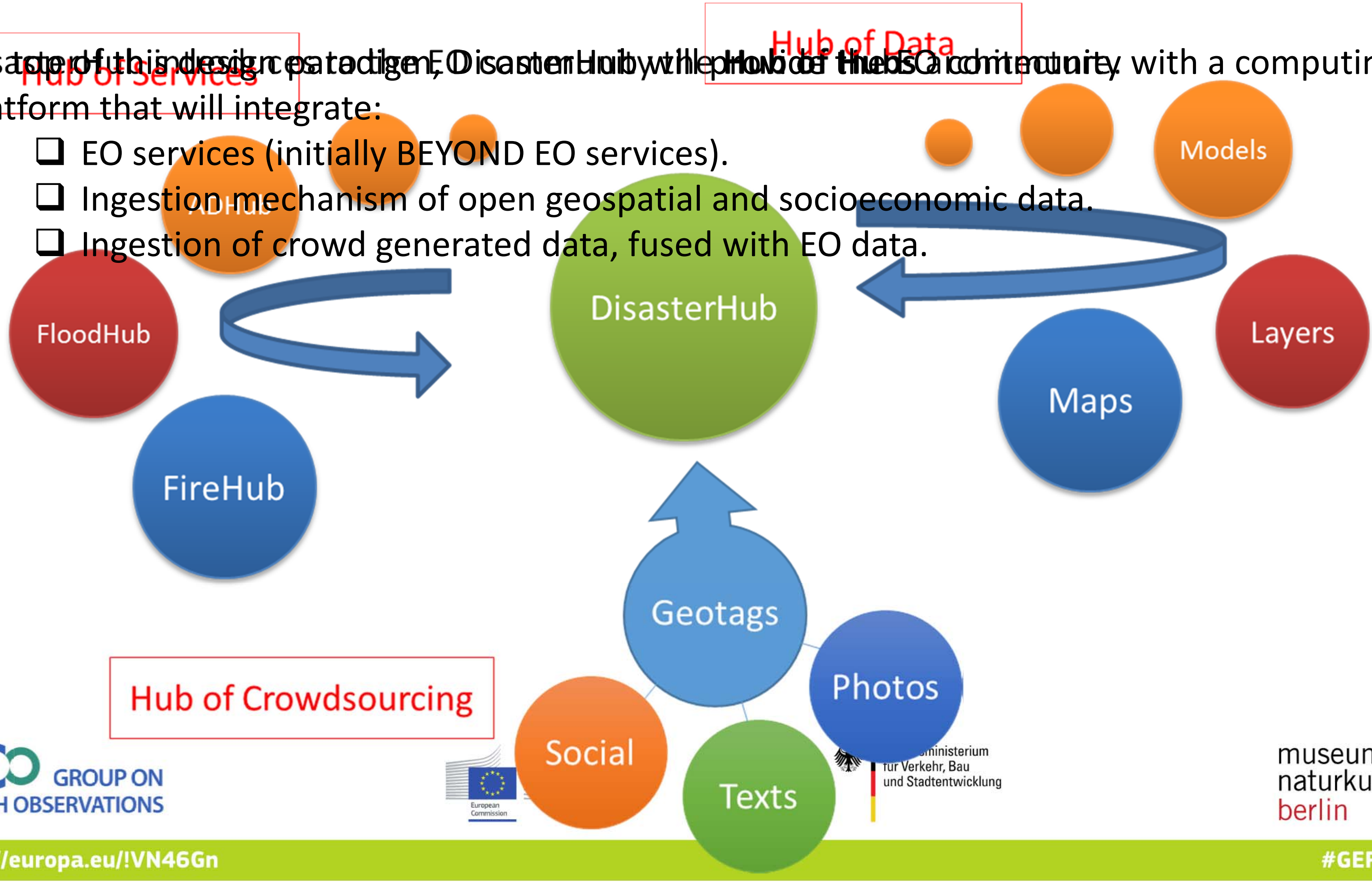
Click on a fire event to navigate the app's map to the specific burnt area



What is innovative?

On top of this design paradigm, DisasterHub will provide the EO community with a computing platform that will integrate:

- ❑ EO services (initially BEYOND EO services).
- ❑ Ingestion mechanism of open geospatial and socioeconomic data.
- ❑ Ingestion of crowd generated data, fused with EO data.



Lessons learnt

- Instrumentation of several open source frameworks and open data is hard.
- Especially the use of open data is harder if those do not comply to protocols and/or are not accessible through OGC compliant services (e.g. Sentinel data).
- Higher challenges regarding the design of a User Interface (UI) that will provide a great User Experience (UX) without compromising the value of data. The lack of space in the mobile devices poses issues that do not exist in the desktop applications.
- Other issues related with network bandwidth, CPU performance, power consumption, offline availability of crucial data (especially during crisis), internet dependency, etc.

The END